

## SURVEILLANCE REPORT

### Weekly influenza surveillance overview

1 April 2011

## Main surveillance developments in week 12/2011 (21 Mar 2011 – 27 Mar 2011)

*This first page contains the main developments of this week and can be printed separately or together with the more detailed information following.*

- Twenty-four EU countries experienced influenza activity of low intensity and all the countries reported unchanging or decreasing trends. Widespread activity was reported by Lithuania only.
- For the second week, influenza B virus was dominant in the EU as a whole. Of detected influenza viruses 41.6% were of type A, and 58.4% were of type B. The latter virus type was dominant or co-dominant with influenza virus A(H1N1) 2009 in eight countries.
- Four countries notified 45 cases with severe respiratory illness, of which twelve were known to be infected by an influenza virus.

**Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI):** Twenty-four of the 28 reporting countries experienced influenza activity of low intensity while three countries reported medium intensity. Eighteen countries and the UK (England) reported decreasing trends. For more information, [click here...](#)

**Virological surveillance:** Of the 502 influenza viruses detected, 41.6% were type A and 58.4% were type B. Since week 40/2011, 97.6% of subtyped influenza A viruses were A(H1N1)2009. For more information, [click here...](#)

**Hospital surveillance of severe acute respiratory infection (SARI):** Of 45 cases with severe respiratory disease reported by four countries, seven had confirmed infection by influenza A and five by influenza B viruses. For more information, [click here...](#)

# Sentinel surveillance (ILI/ARI)

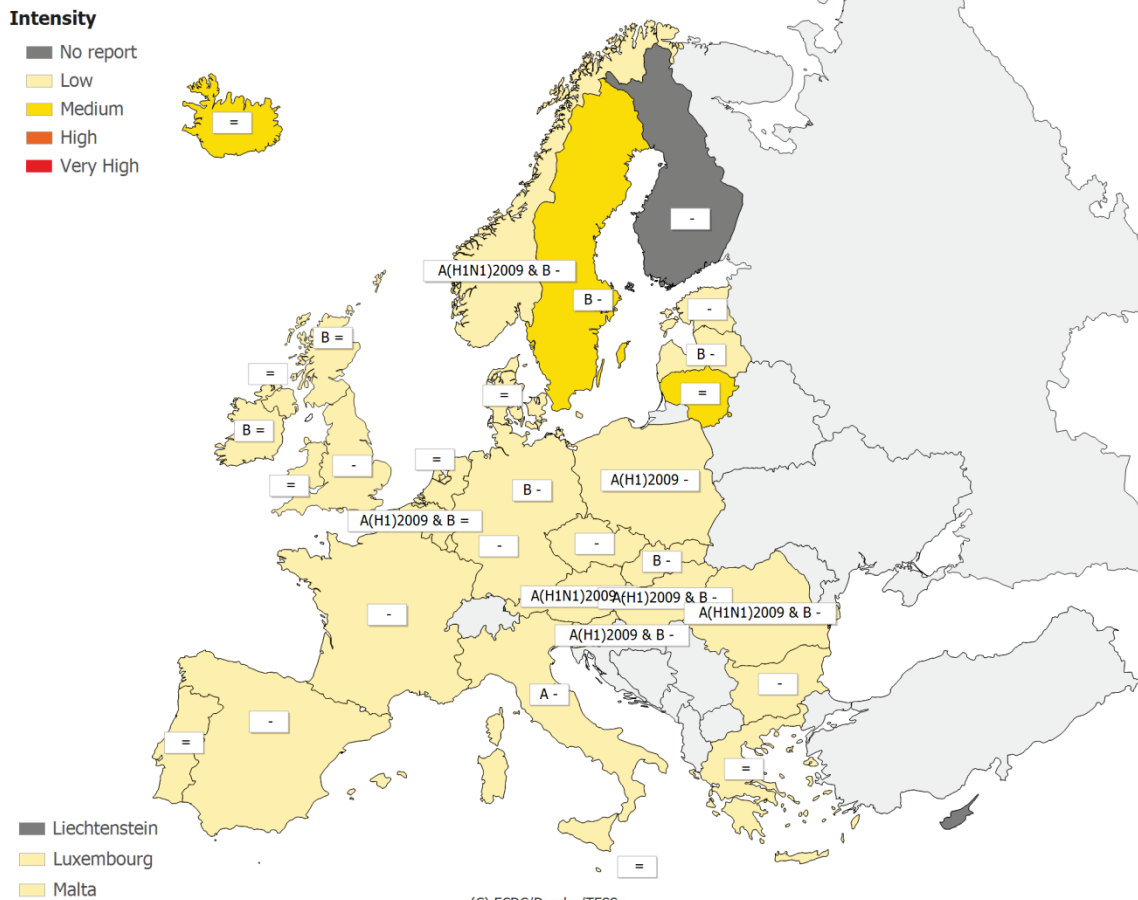
## Weekly analysis – epidemiology

During week 12/2011, 28 countries reported clinical data. Iceland, Lithuania and Sweden reported medium intensity, while low intensity was reported by twenty-four countries. No country reported high intensity levels of ILI/ARI. (Map 1, Table 1).

Only one country, Lithuania, reported widespread activity during week 12/2011. Six countries (Germany, Iceland, Italy, Latvia, Poland and Sweden) reported regional activity, while 20 countries (including England, Scotland and Wales) reported sporadic or local activity. No activity was reported by Portugal and the UK (Northern Ireland) (Map 2, Table 1).

Eighteen countries and the UK (England) reported decreasing trends during week 12/2011. Unchanging trends were seen in ten countries (including Northern Ireland, Scotland and Wales). No increasing trends were reported (Map 1 and 2, Table 1).

**Map 1: Intensity for week 12/2011**

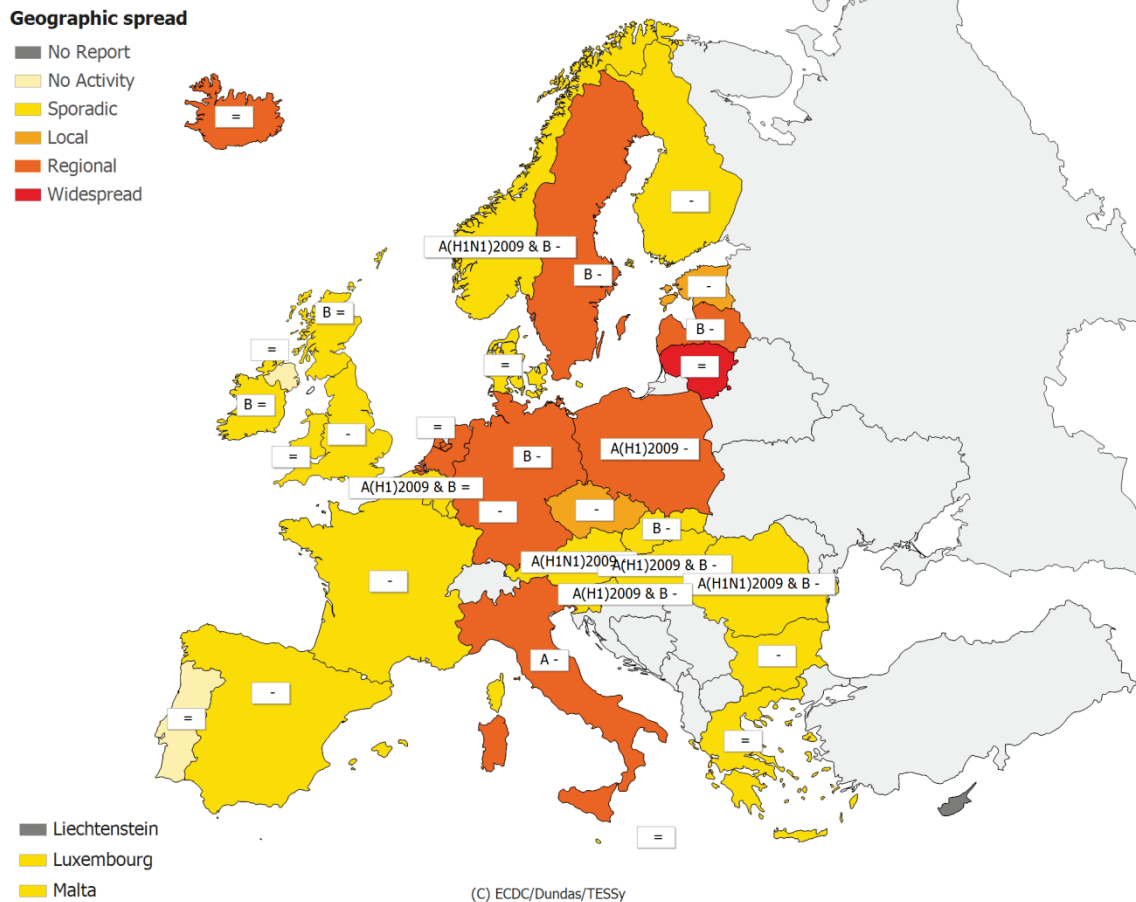


\* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

Legend:

<b>No report</b>	Intensity level was not reported	-	Decreasing clinical activity
<b>Low</b>	No influenza activity or influenza at baseline levels	+	Increasing clinical activity
<b>Medium</b>	Usual levels of influenza activity	=	Stable clinical activity
<b>High</b>	Higher than usual levels of influenza activity	<b>A</b>	Type A
<b>Very high</b>	Particularly severe levels of influenza activity	<b>A(H1)2009</b>	Type A, Subtype (H1)2009
		<b>A(H1)2009 &amp; B</b>	Type B and Type A, Subtype (H1)2009
		<b>A(H1N1) 2009</b>	Type A, Subtype (H1N1)2009
		<b>A(H1N1) 2009 &amp; B</b>	Type B and Type A, Subtype (H1N1)2009
		<b>B</b>	Type B

**Map 2: Geographic spread for week 12/2011**



\* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

<b>No report</b>	Activity level was not reported	-	Decreasing clinical activity
<b>No activity</b>	No evidence of influenza virus activity (clinical activity remains at baseline levels)	+	Increasing clinical activity
		=	Stable clinical activity
<b>Sporadic</b>	Isolated cases of laboratory confirmed influenza infection	<b>A</b>	Type A
<b>Local outbreak</b>	Increased influenza activity in local areas (e.g. a city) within a region, or outbreaks in two or more institutions (e.g. schools) within a region (laboratory confirmed)	<b>A(H1)2009</b>	Type A, Subtype (H1)2009
		<b>A(H1)2009 &amp; B</b>	Type B and Type A, Subtype (H1)2009
<b>Regional activity</b>	Influenza activity above baseline levels in one or more regions with a population comprising less than 50% of the country's total population (laboratory confirmed)	<b>A(H1N1) 2009</b>	Type A, Subtype (H1N1)2009
		<b>A(H1N1) 2009 &amp; B</b>	Type B and Type A, Subtype (H1N1)2009
<b>Widespread</b>	Influenza activity above baseline levels in one or more regions with a population comprising 50% or more of the country's population (laboratory confirmed)	<b>B</b>	Type B

**Table 1: Epidemiological and virological overview by country, week 12/2011**

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive*	ILI per 100.000	ARI per 100.000	Epidemiological overview	Virological overview
Austria	Low	Sporadic	Decreasing	11	B	18.2	1.1	18.7	Graphs	Graphs
Belgium	Low	Sporadic	Stable	15	None	13.3	40.6	1331.9	Graphs	Graphs
Bulgaria	Low	Sporadic	Decreasing	-	None	0.0	-	739.3	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Local	Decreasing	-	-	0.0	76.3	1029.0	Graphs	Graphs
Denmark	Low	Sporadic	Stable	5	None	20.0	12.5	-	Graphs	Graphs
Estonia	Low	Local	Decreasing	37	None	8.1	10.0	333.5	Graphs	Graphs
Finland	Unknown (no information available)	Sporadic	Decreasing	23	None	8.7	-	-	Graphs	Graphs
France	Low	Sporadic	Decreasing	28	None	14.3	-	1241.7	Graphs	Graphs
Germany	Low	Regional	Decreasing	97	B	46.4	-	963.4	Graphs	Graphs
Greece	Low	Sporadic	Stable	4	None	0.0	79.7	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	55	A(H1)2009 & B	27.3	87.3	-	Graphs	Graphs
Iceland	Medium	Regional	Stable	0	-	0.0	50.9	-	Graphs	Graphs
Ireland	Low	Sporadic	Stable	4	B	0.0	9.4	-	Graphs	Graphs
Italy	Low	Regional	Decreasing	11	A	9.1	147.0	-	Graphs	Graphs
Latvia	Low	Regional	Decreasing	0	B	0.0	-*	-*	Graphs	Graphs
Lithuania	Medium	Widespread	Stable	8	None	12.5	39.9	600.5	Graphs	Graphs
Luxembourg	Low	Sporadic	Decreasing	-	-	0.0	-*	-*	Graphs	Graphs
Malta	Low	Sporadic	Stable	0	None	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	10	None	30.0	27.4	-	Graphs	Graphs
Norway	Low	Sporadic	Decreasing	4	A(H1N1)2009 & B	0.0	46.4	-	Graphs	Graphs
Poland	Low	Regional	Decreasing	20	A(H1)2009	20.0	72.2	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	3.6	-	Graphs	Graphs
Romania	Low	Sporadic	Decreasing	26	A(H1N1)2009 & B	42.3	17.1	929.1	Graphs	Graphs
Slovakia	Low	Sporadic	Decreasing	5	B	20.0	219.6	1674.4	Graphs	Graphs
Slovenia	Low	Sporadic	Decreasing	8	None	12.5	3.7	980.2	Graphs	Graphs
Spain	Low	Sporadic	Decreasing	51	None	13.7	16.4	-	Graphs	Graphs
Sweden	Medium	Regional	Decreasing	7	B	71.4	6.9	-	Graphs	Graphs
UK - England	Low	Sporadic	Decreasing	33	None	3.0	5.5	429.4	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Stable	0	-	0.0	14.6	400.6	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	18	B	16.7	2.3	293.5	Graphs	Graphs
UK - Wales	Low	Sporadic	Stable	-	-	0.0	4.3	-	Graphs	Graphs
Europe				480		23.3				Graphs

\*Incidence per 100 000 is not calculated for these countries as no population denominator is provided.  
Note: Liechtenstein is not reporting to the European Influenza Surveillance Network

## Description of the system

This surveillance is based on nationally organised sentinel networks of physicians, mostly general practitioners (GPs), covering at least 1–5% of the population in their countries. All EU/EEA Member States (except Liechtenstein) are participating. Depending on their country's choice, each sentinel physician reports the weekly number of patients seen with influenza-like illness (ILI), acute respiratory infection (ARI) or both to a national focal point. From the national level, both numerator and denominator data are then reported to the European Surveillance System (TESSy) database. Additional semi-quantitative indicators of intensity, geographic spread and trend of influenza activity at the national level are also reported.

# Virological surveillance

## Weekly analysis – virology

In week 12/2011, 26 countries (including England, Northern Ireland and Scotland) reported virological data. Sentinel physicians collected 480 specimens of which 23.3% tested positive for influenza virus (Tables 1 and 2, Figure 3).

Of the 502 influenza viruses detected in sentinel and non-sentinel specimens during week 12/2011, 209 (41.6%) were type A and 293 (58.4%) were type B. Eight A(H3) influenza viruses were identified in Sweden. Influenza B virus was reported as dominant by six countries and the UK (Scotland) and co-dominant with A(H1N1)2009 by three countries. For the second week this season the proportion of influenza B viruses was higher overall than that of influenza A viruses (Table 1).

Since week 40/2010, of the 55 848 influenza detections in sentinel and non-sentinel specimens, 37 373 (66.9%) were influenza A and 18 475 (33.1%) were influenza B viruses. Of 26 991 influenza A viruses subtyped, 26 346 (97.6%) were A(H1N1) 2009 virus and 645 (2.4%) were A(H3) viruses (Table 2). Trends of virological detections since week 40/2010 are shown in Figures 1–3.

Since week 40/2010, 5 443 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 2 690 as A/California/7/2009 (H1N1)-like, 2 428 as B/Brisbane/60/2008-like (Victoria lineage), 208 as B/Florida/4/2006-like (Yamagata lineage) and 117 as A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2010, Denmark, Germany, Ireland, Italy, the Netherlands, Norway, Spain and the UK have reported antiviral resistance data to TESSy. Ninety-one of influenza A(H1) 2009 viruses tested were resistant to oseltamivir but remained sensitive for zanamivir. All the resistant viruses carried the NA H275Y substitution. Seventeen of 55 resistant viruses, from patients for whom exposure to antivirals was known, were from patients who had not been treated with oseltamivir. Most likely is that these patients have been infected with viruses carrying the NA H275Y substitution.

More details on circulating viruses can be found in the [report](#) prepared by the Community Network of Reference Laboratories (CNRL) coordination team.

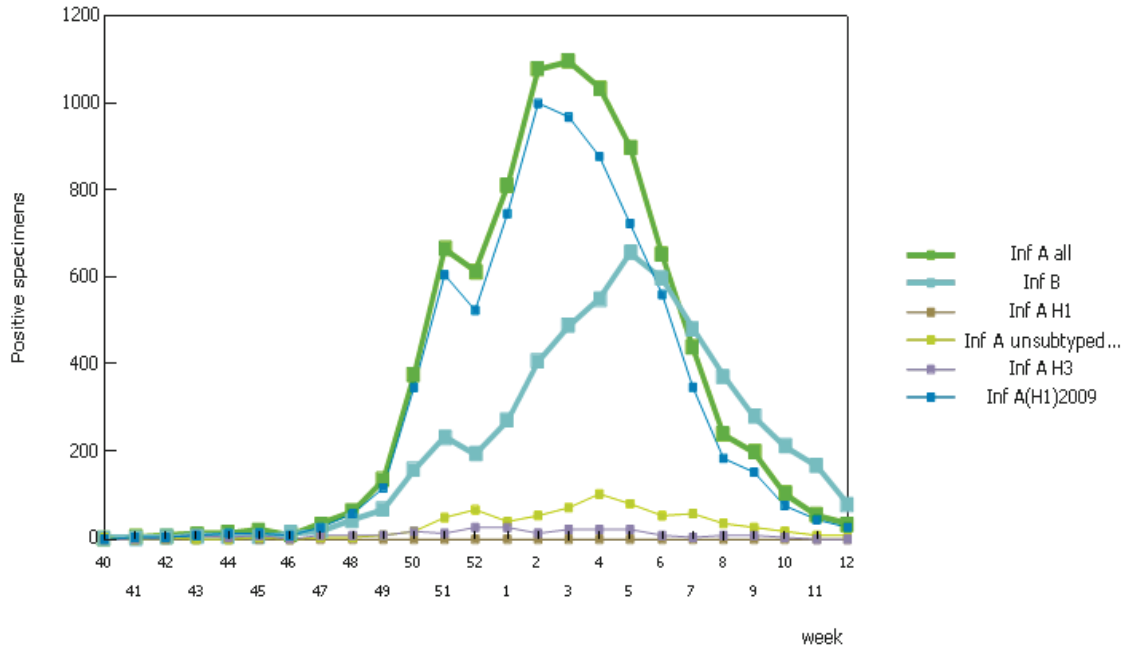
In week 12/2011, respiratory syncytial virus detections continued to decline in 14 reporting countries (Figure 5).

**Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–12/2011**

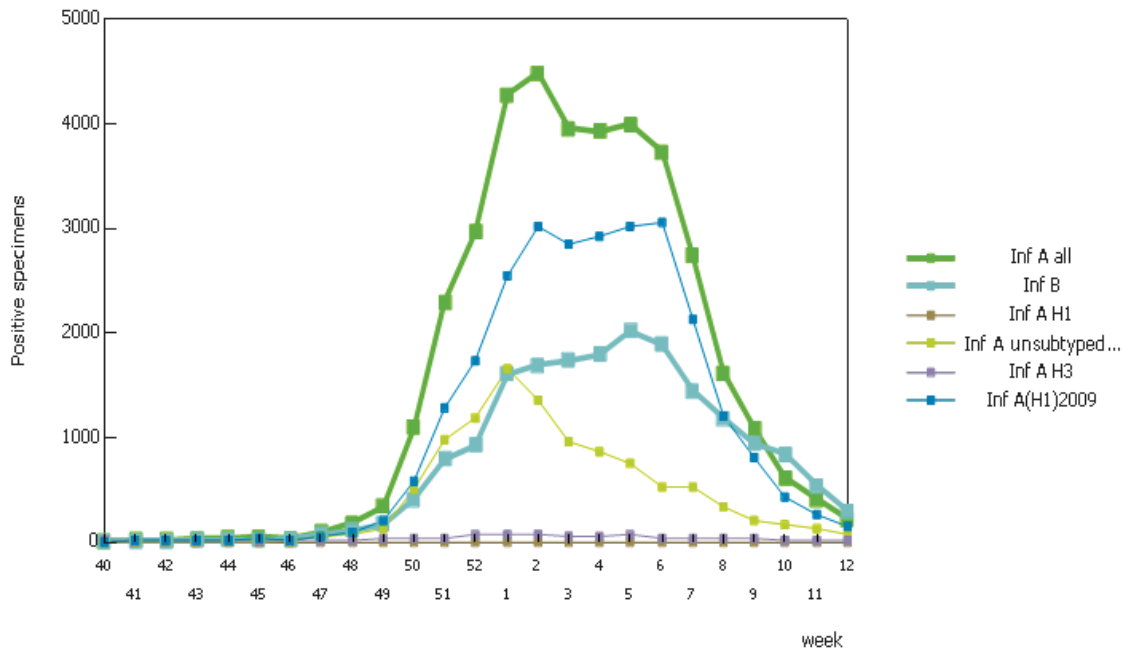
Virus type/subtype	Current Period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	33	176	8311	29062
A(H1)2009	26	112	7411	18935
A (subtyping not performed)	7	56	685	9697
A (not subtypable)	0	0	0	0
A (H3)	0	8	215	430
A (H1)	0	0	0	0
Influenza B	79	214	5309	13166
<b>Total Influenza</b>	<b>112</b>	<b>390</b>	<b>13620</b>	<b>42228</b>

*Note:* A(H1)2009, A(H3) and A(H1) includes both N-subtyped and non-N-subtyped viruses

**Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report, weeks 40/2010–12/2011**

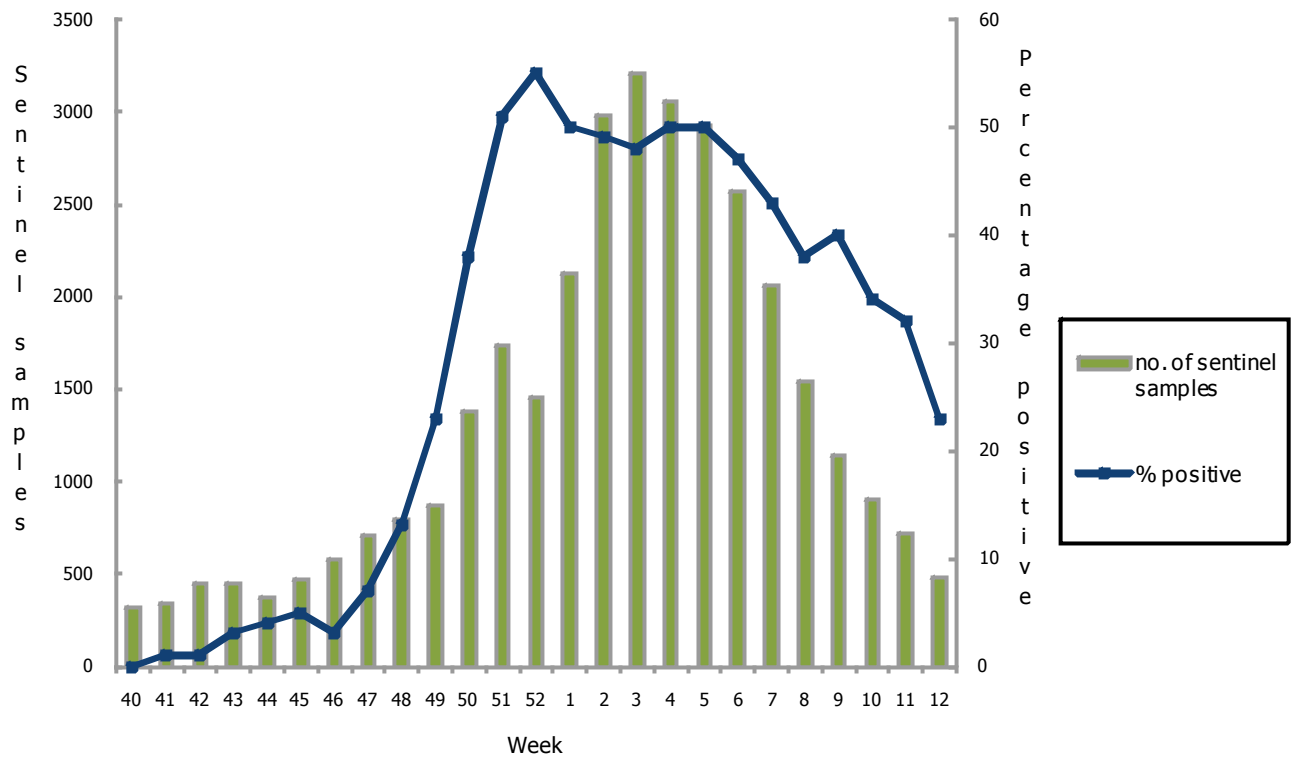


**Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2010–12/2011**

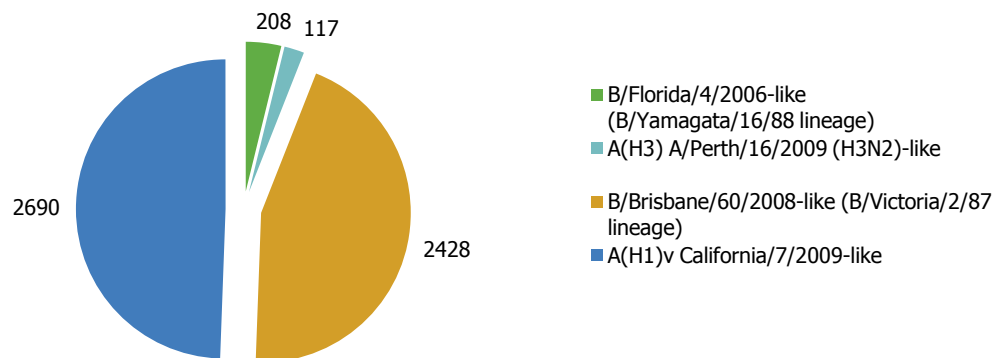




**Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010–12/2011**



**Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–12/2011**

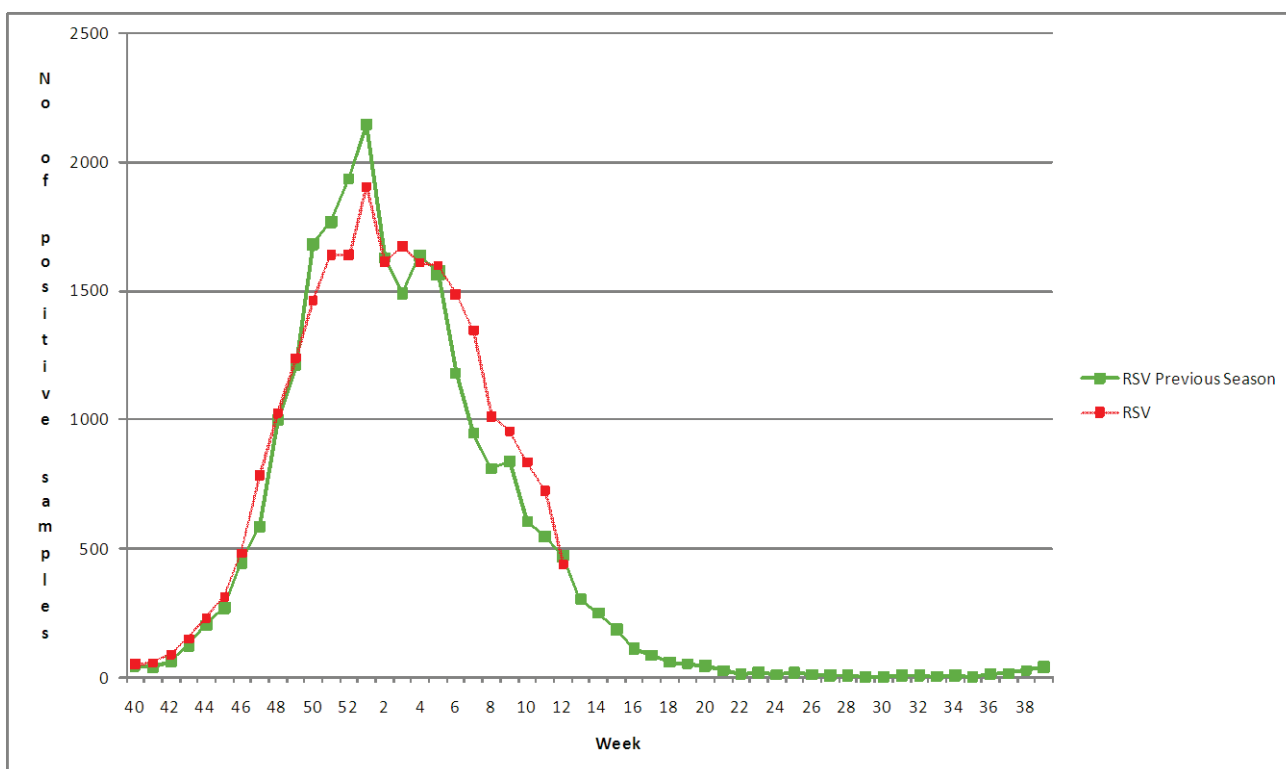


**Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2010–12/2011**

Virus type and subtype	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir		Isolates tested	Resistant n (%)
	Isolates tested	Resistant n (%)	Isolates tested	Resistant n (%)		
A(H3)	4	0	4	0	2	2 (100)
A(H1)	0	0	0	0	0	0
A(H1)2009	1982 <sup>#</sup>	91 (4.6)	1982	0	178	178 (100)
B	332	0	322	0	NA*	NA*

\* NA - not applicable, as M2 inhibitors do not act against influenza B viruses.  
 Data are from single location (e.g. H275Y only) or multiple location mutation analysis (full sequencing) and/or phenotypic characterisation (IC50 determination), and therefore data should be interpreted in this context.  
<sup>#</sup>Number of tested viruses is under reported and therefore the percentage resistant should be interpreted with caution.

**Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2010–12/2011**



### Description of the system

According to the nationally defined sampling strategy, sentinel physicians take nasal or pharyngeal swabs from patients with influenza-like illness (ILI), acute respiratory infection (ARI) or both and send the specimens to influenza-specific reference laboratories for virus detection, (sub-)typing, antigenic or genetic characterisation and antiviral susceptibility testing.

For details on the current virus strains recommended by WHO for vaccine preparation [click here](#).

# Hospital surveillance – severe acute respiratory infection (SARI)

## Weekly analysis – SARI

During week 12/2011, a total of 45 SARI cases were reported to TESSy by Austria, Belgium, Romania and Slovakia. Of these 45 SARI cases, seven were infected by A(H1N1)2009 influenza virus and five by an influenza B virus.

Since week 40/2010, 4 624 hospitalised cases with severe respiratory illness were notified, of which 3 079 (66.6%) were due to an influenza virus infection. Of 3 079 influenza virus positive specimens, 2 887 (93.8%) were type A and 192 (6.6%) were type B. Of 2 730 subtyped influenza A viruses, 2 708 (99.2%) were influenza A(H1N1)2009 and the remaining <1% were of the H3 subtype (Table 6).

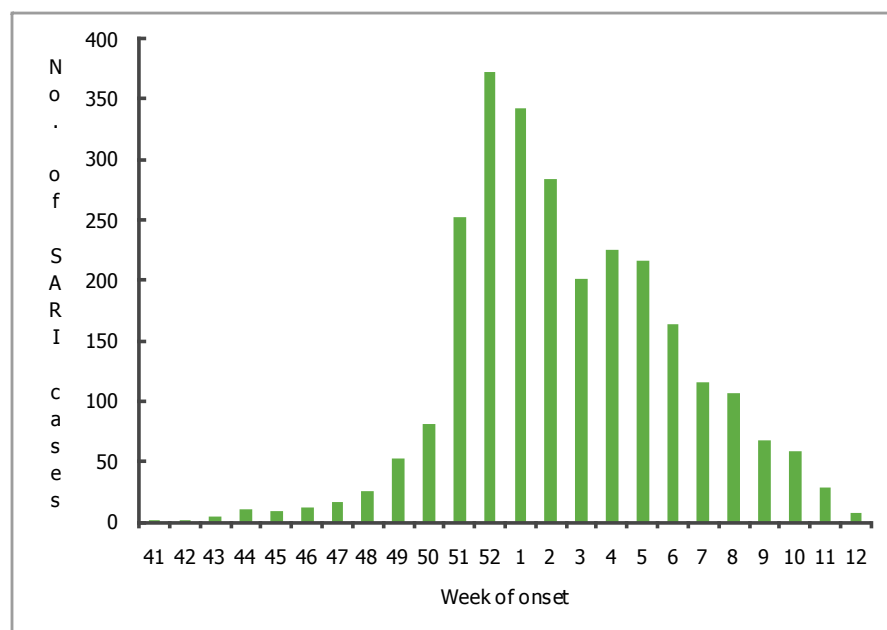
Since week 40/2010, 1 878 admissions to ICU were reported, 1 007 (53.6%) of whom required ventilation (Table 8).

In 3 324 cases with severe respiratory illness with available information, 1 322 (39.9%) had no prior underlying conditions. The two most common associated underlying conditions were obesity (10.0%) and chronic lung condition (8.1%), respectively (Figure 9).

**Table 4: Cumulative number of SARI cases, weeks 40/2010–12/2011**

Country	Number of cases	Incidence of SARI cases per 100,000 population	Number of fatal cases reported	Incidence of fatal cases per 100,000 population	Estimated population covered
Finland	76		13		
Portugal	413		43		
Romania	409	6.38	30	0.47	6413821
Austria	370		12		
France	785		133		
Ireland	122		23		
Belgium	868				
Spain	1340		148		
Malta	55		1		
Slovakia	186	3.42	21	0.39	5433385
Total	4624		424		

**Figure 6: Number of SARI cases by week of onset, weeks 40/2010- week 12/2011**



**Table 5: Number of SARI cases by age and gender, weeks 40/2010–12/2011**

Age groups	Male	Female
Under 2	335	247
2-17	360	321
18-44	591	557
45-59	666	477
>=60	565	439
Unknown	32	12
Total	2549	2053

**Table 6: Number of SARI cases by influenza type and subtype, week 12/2011**

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	7	2887
A(H1)2009	7	2708
A(subtyping not performed)		157
A(H1)		
A(H3)		22
Influenza B	5	192
Other Pathogen		34
Unknown	33	1511
Total	45	4624

**Table 7: Number of SARI cases by antiviral treatment, weeks 40/2010–12/2011**

Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Oseltamivir	54	1703
Zanamivir	1	21
Oseltamivir and Zanamivir		11
Other (or combinations with other)	112	117
Unknown	3206	2454
None	1251	318
Total	4624	4624

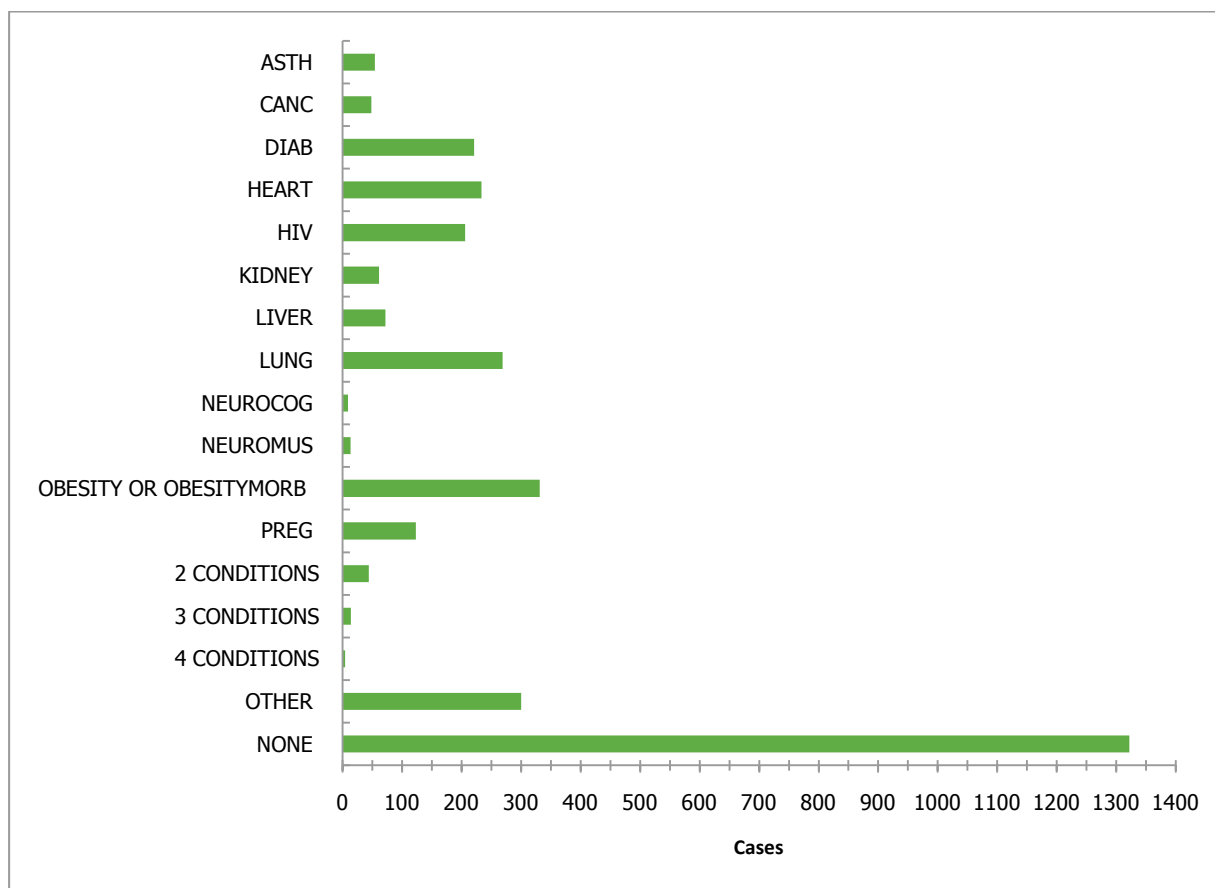
**Table 8: Number of SARI cases by level of care and respiratory support, weeks 40/2010–12/2011**

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support available			1	
No respiratory support necessary	173	460	417	
Oxygen therapy	128	192	352	
Respiratory support given unknown	570	309	720	226
Ventilator	1007	17	6	46

**Table 9: Number of SARI cases by vaccination status, weeks 40/2010–12/2011**

Vaccination Status	Number Of Cases	Percentage of cases
Both, monovalent 2009 pandemic H1N1 and seasonal 2010 vaccination	122	2.6
Monovalent 2009 pandemic H1N1 vaccination	48	1
Not vaccinated	2135	46.2
Seasonal 2010 vaccination	225	5
Unknown	2094	45.3
TOTAL	4624	

**Figure 7: Number of SARI cases by underlying condition, weeks 40/2010–12/2011**



*Note: Other represents any other underlying condition than: asthma (ASTH), cancer (CANC), diabetes (DIAB), chronic heart disease (HEART), HIV/other immune deficiency (HIV), kidney-related conditions (KIDNEY), liver-related conditions (LIVER), chronic lung disease (LUNG), neurocognitive disorder (including seizure; NEUROCOG), neuromuscular disorder (NEUROMUS), obesity (BMI between 30 and 40; OBESITY), morbid obesity (BMI above 40; OBESITYMORB) or pregnancy (PREG). NONE is reported if there were no underlying conditions.*

## Country comments and specific information concerning hospitalised cases and mortality

This section is compiled from specific comments and published reports on the website where these are indicated by reporters. They are structured to show influenza-associated hospitalisations (and some emergency hospital consultations), use of higher level care and mortality.

**Denmark:** Up to 28 March (week 12/2011), a cumulative total of 150 influenza patients have been reported by intensive care units (ICUs) in Denmark with a median age of 55 years (range 1 week to 83 years). Unexpectedly, six patients were admitted to an ICU in week 12/2011 compared with one new admission in week 11. Other influenza surveillance systems in the country show low activity. The pressure on the wards, reflected by the proportion of ICU beds used for influenza patients, also increased. On Monday 28 March 2011 at 8:00 am, seven influenza patients were in ICUs, corresponding to 2.7% of the total number of occupied ICU beds in the country, compared with 0.9% in the week before. Of the ICU patients, 113 were diagnosed with influenza A, 44 of whom were reported to be further subtyped as subtype H1N1. Thirty-seven patients had an influenza B infection. Ten patients with influenza A and two patients with influenza B received extracorporeal membrane oxygenation (ECMO). Eighteen patients with confirmed influenza A and seven with influenza B died. Twenty-three patients were reported to be previously healthy and for another 40 patients no underlying condition was reported. For 87 patients one or more underlying conditions were described. One influenza patient was reported to be pregnant. Initial alignment with the Danish Vaccination Registry showed that 27 of the 150 patients had received the 2010/2011 seasonal influenza vaccine between week 39 and 50 of 2010. The other 123 patients were probably not vaccinated with the 2010/2011 seasonal influenza vaccine.

**Greece:** As of 30 March 2011 a total of 363 laboratory-confirmed cases (100% A(H1N1)2009) have been admitted to an ICU, while 166 deaths have been reported to the Hellenic Centre for Disease Control and Prevention. Of those, 131/166 deaths were in an ICU, while another 35 fatal cases were hospitalised in regular wards.

As of 30 March 2011, 32 patients remain hospitalised in an ICU. This corresponds to an approximate 5% of the total number of ICU beds in the country. 63.1% of the 363 cases fall in one of the high risk clinical groups for whom influenza vaccination is recommended (chronic respiratory/ cardiological/ liver/ renal/ neuromuscular/ metabolic disease, immunosuppression, pregnancy or morbid obesity), but only 14 (3.9%) patients were reported as vaccinated with the seasonal 2010/11 vaccine. The median age of the 363 cases was 52 years (range: 3 months – 86 years). Regarding the notified deaths, 80.1% (133/166) of the fatal cases of influenza belonged to one or more of the groups for which influenza vaccination is recommended annually, but only four (2.5%) had been vaccinated with the seasonal 2010/11 vaccine. The median age of the 166 fatal cases was 56 years.

**Malta:** [Link here](#). Situation is stable.

**Netherlands:** [RIVM influenza link here](#). Since 4 October 2010, a total of 654 hospital admissions due to laboratory-confirmed influenza A(H1N1)2009 infections were reported. There were also 38 influenza-related deaths. The largest group of patients is children between 0 and 5 years old. Almost half of the hospitalised patients had an underlying condition. There are still patients hospitalised because of influenza A(H1N1)2009, but numbers have been decreasing over the last weeks.

**Spain:** [ISCIII influenza link here](#). In Spain, information concerning severe illness due to influenza infection with associated admission to hospitals comes from a surveillance system developed during the 2009/2010 pandemic season specifically for this purpose. Since week 40/2010 and up to week 12/2011 1360 severe hospitalised confirmed influenza cases have been reported. Severely affected cases were mostly in the 15–64 year age groups (67%), 15% were less than five years old and 18% were more than 64 years old. 26% of patients had no known risk factors. Of 1354 cases with outcome information 154 died (13% with no known risk factors). Of the severe cases 885 had information available on the status of influenza vaccination for the 2010/2011 season and only 132 (15%) cases had been immunised. Monovalent pandemic vaccines 2009 were reported to have been received by 9% of hospitalised cases. Most of severe and fatal cases included in the groups for whom influenza vaccination is recommended had not been vaccinated this season.

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*The report text was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eva Broberg, Flaviu Plata, Phillip Zucs and René Snacken. The bulletin text was reviewed by the Community Network of Reference Laboratories for Human Influenza in Europe (CNRL) coordination team: Adam Meijer, Rod Daniels, John McCauley and Maria Zambon. On behalf of the EISN members the bulletin text was reviewed by Bianca Snijders (RIVM Bilthoven, The Netherlands) and Thedi Ziegler (National Institute for Health and Welfare, Finland). Additionally the report is reviewed by experts of WHO regional office Europe.*

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*All data published in the WISO are up-to-date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons as countries tend to retrospectively update their numbers in the database.*

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